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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,145	06/26/2003	Andreas Marek	11073 (NCR.0106US)	5163
7590	01/03/2006		EXAMINER KIM, PAUL	
John D. Cowart NCR Corporation Law Department IP WHQ-4W 1700 S. Patterson Blvd. Dayton, OH 45479			ART UNIT	PAPER NUMBER
			2161	
DATE MAILED: 01/03/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/607,145	<b>Applicant(s)</b> MAREK ET AL.	
	<b>Examiner</b> Paul Kim	<b>Art Unit</b> 2161	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



**SAM RIMELL**  
**PRIMARY EXAMINER**

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>26 June 2003</u> . | 6) <input type="checkbox"/> Other: _____  |

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### DETAILED ACTION


1. This action is responsive to the following communication: Original Application filed on June 26, 2003.
2. Claims 1-28 are pending. Claims 1, 14, and 21 are independent.

#### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

~~(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.~~

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4. **Claims 1-3, 6-11, and 13-15, 17-22, 24-26, and 28** are rejected under 35 U.S.C. 102 <sup>(E)</sup>~~(b)~~ as being anticipated by Pederson et al (U.S. Patent No. 6,671,687, hereinafter referred to as PEDERSON), filed on September 29, 2000, and issued on December 30, 2003.
  5. Regarding **independent claims 1 and 14**, PEDERSON teaches:

A method (also an article) for use in a database system {See PEDERSON, col. 2, lines 5-7, wherein this reads over "method of presenting information relating to a database system"}, comprising:

defining a user-defined data type (UDT) with code according to an interpreted programming language; and {See PEDERSON, col. 4, lines 16-18, wherein this reads over "data-type specific program 420 is sued to create a user-defined type (UDT)"}.

storing a table containing at least one attribute according to the user-defined data type {See PEDERSON, col. 5, lines 16-18, wherein this reads over "a user-defined data type is a credit card type associated with a predetermined field of characters"; col. 6, lines 5-7, wherein this reads over "a routine for

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*creating a sales table; and col. 6, lines 10-15, wherein the example for creating a sales table contains a UDT "Credit\_Card\_Type"}.*

6. Regarding **dependent claims 2 and 15**, PEDERSON teaches:

The method of claim 1 (also an article), further comprising defining a user-defined method (UDM) associated with the UDT with code according to the interpreted programming language {See PEDERSON, col. 4, lines 36-38, wherein this reads over "[t]he methods 460 comprise predefined methods"; and col. 5, 37-38, wherein this reads over "the following method may be used to access the credit card data type"}.

7. Regarding **dependent claims 3 and 24**, PEDERSON teaches:

The method of claim 2 (also the database system of claim 21), further comprising executing the UDM with an interpreter {See PEDERSON, col. 4, lines 45-48, wherein this reads over "[t]he client specific application 415 is also capable of accessing the methods . . . to execute various methods"}.

8. Regarding **dependent claims 6 and 17**, PEDERSON teaches:

The method of claim 1 (also an article), wherein defining the UDT with code according to the interpreted programming language comprises defining the UDT with code according to one of JAVA and C# {See PEDERSON, col. 4, lines 13-14, wherein this reads over "the data-type specific program 420 is a JAVA program"}.

9. Regarding **dependent claims 7 and 18**, PEDERSON teaches:

The method of claim 1 (also an article), further comprising receiving a Structured Query Language (SQL) statement to create the UDT, the SQL statement specifying a file containing the code according to the interpreted programming language {See PEDERSON, col. 3, line 64 – col. 4, line 1, wherein this reads over "[t]he client specific application 415 includes a data-type specific program"; and col. 4, lines 49-51, wherein this reads over "the client specific application 415 uses the methods 460 in queries, such as SQL queries"}.

10. Regarding **dependent claims 8 and 19**, PEDERSON teaches:

The method of claim 7 (also an article), further comprising declaring a user-defined method (UDM) in the statement to create the UDT {See PEDERSON, col. 5, lines 18-20, "the following function is used to assign a credit card data type associated with a data field; and col. 5, lines 22 and 39, wherein this reads over respectively as "CREATE TYPE Credit\_Card\_Type" and "METHOD Credit\_Card\_Type"}.

11. Regarding **dependent claims 9 and 20**, PEDERSON teaches:

The method of claim 8 (also an article), further comprising receiving a second SQL statement to create the UDM, wherein the second SQL statement specifies a file containing code to define the UDM, the code according to the interpreted programming language {See PEDERSON, col. 3, line 64 – col. 4, line 1, wherein this reads over “[t]he client specific application 415 includes a data-type specific program”; col. 4, lines 36-37, wherein this reads over “[t]he methods 460 comprise pre-defined methods that are called by the client specific application”; and col. 4, lines 49-51, wherein this reads over “the client specific application 415 uses the methods 460 in queries, such as SQL queries”}.

12. Regarding **dependent claim 10**, PEDERSON teaches:

The method of claim 1, further comprising:

providing an interpreted programming language virtual machine to provide a container for the UDT {See PEDERSON, col. 1, lines 23-26, wherein this reads over “a database system in which such information is collected in a data warehouse in which data is input”; and col. 3, lines 15-18, wherein this reads over “the system of Fig. 1 . . . assign[s] a user-defined data type ”; and

executing a routine to establish a connection from a database in the database system to the virtual machine {See PEDERSON, Figure 1; and col. 3, lines 11-15, wherein this reads over “[t]he system described in Fig. 1 is capable of facilitating communications of data . . . from one database to a client”}.

13. Regarding **dependent claim 11**, PEDERSON teaches:

The method of claim 10, further comprising providing an interface between the database and the virtual machine {See PEDERSON, col. 4, lines 20-23, wherein this reads over “[t]he data requested by the client 195 may be sent by the interface 425, via the network interface 145, to the client 195 or to the second server 220 for storage into the second database 180”}.

14. Regarding **dependent claim 13**, PEDERSON teaches:

The method of claim 10, further comprising receiving a Structured Query Language (SQL) statement to create the UDT {See PEDERSON, col. 3, line 64 – col. 4, line 1, wherein this reads over “[t]he client specific application 415 includes a data-type specific program”; and col. 4, lines 49-51, wherein this reads over “the client specific application 415 uses the methods 460 in queries, such as SQL queries”}.

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15. Regarding **independent claim 21**, PEDERSON teaches:

A database system comprising:

a storage to store code according to an interpreted programming language {See PEDERSON, col. 2, lines 16-24, wherein this reads over "a first database"};  
and

a controller {See PEDERSON, col. 2, lines 16-24, wherein this reads over "a first database controller"} to receive a database query to create a user defined data type (UDT), the database query containing a clause identifying a storage location of the code according to the interpreted programming language {See PEDERSON, col. 6, line 19, wherein this reads over "SELECT Credit\_Card.Number() FROM SalesTable"}.

16. Regarding **dependent claim 23**, the Examiner takes Official Notice that it is well-known in the art to have code corresponding to the C# language. Furthermore, it would have been obvious to one of ordinary skill in the art at the time the invention to use interpreted programming language such as C# to interpret UDTs and UDMs.

17. Regarding **dependent claim 25**, PEDERSON teaches:

The database system of claim 24, the storage to store second code according to the interpreted programming language, and the controller {See PEDERSON, col. 2, lines 16-24, wherein this reads over "a first database controller"} to further receive a second database query to create a user-defined method (UDM) associated with the UDT, the second database query identifying a location of the second code {See PEDERSON, col. 6, line 19, wherein this reads over "SELECT Credit\_Card.Number() FROM SalesTable"}.

18. Regarding **dependent claim 26**, PEDERSON teaches:

The database system of claim 25, the interpreter to execute the second code {See PEDERSON, col. 4, lines 45-48, wherein this reads over "[t]he client specific application 415 is also capable of accessing the methods . . . to execute various methods"}.

19. Regarding **dependent claim 28**, PEDERSON teaches:

The database system of claim 21, the storage to further store a table containing an attribute according to the UDT {See PEDERSON, col. 5, lines 16-18, wherein this reads over "a user-defined data type is a credit card type associated with a predetermined field of characters"; col. 6, lines 5-7, wherein this reads over "a routine for creating a sales table; and col. 6, lines 10-15, wherein the example for creating a sales table contains a UDT "Credit\_Card\_Type"}.

***Claim Rejections - 35 USC § 103***

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. **Claims 4-5, 16, 22, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over PEDERSON, in view of Sokolov (U.S. Patent No. 6,918,109, hereinafter referred to as SOKOLOV), filed on October 24, 2001, and issued on July 12, 2005.

PEDERSON teaches the limitations of claims 1-3, 6-11, and 13-15, 17-22, 24-26, and 28 above.

PEDERSON differs from the claimed invention in that PEDERSON fails to disclose a method wherein executing the UDM with the interpreter comprises executing the UDM with a virtual machine (claims 4 and 16).

PEDERSON differs from the claimed invention in that PEDERSON fails to disclose a method wherein the UDM is executed with a JAVA virtual machine (claim 5).

PEDERSON differs from the claimed invention in that PEDERSON fails to disclose a database system wherein the code comprises JAVA bytecode (claim 22).

PEDERSON differs from the claimed invention in that PEDERSON fails to disclose a database system wherein the interpreter comprises a virtual machine (claim 27).

22. Regarding **dependent claims 4 and 16**, PEDERSON, in combination with SOKOLOV, discloses a method wherein the UDM is executed with a virtual machine *{See SOKOLOV, col. 2, lines 8-10, wherein this reads over “[t]he Java virtual machine is an interpreter that decodes and executes the Bytecodes in the Java class file”}*.

The Java virtual machine is commonly implemented in software by means of an interpreter for the Java methods. As disclosed in the specification, the UDTs and UDMs are written in Java code, specifically Bytecode to be executed by the JAVA virtual machine. SOKOLOV discloses an invention which applies a Java virtual machine in decoding and executing Bytecodes in a Java class file. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by PEDERSON by combining it with the invention disclosed by SOKOLOV.

One of ordinary skill in the art would have been motivated to do this modification so that UDMs may be properly executed.

23. Regarding **dependent claim 5**, PEDERSON, in combination with SOKOLOV, discloses a method wherein the UDM is executed with a JAVA virtual machine *{See SOKOLOV, col. 2, lines 8-10, wherein this reads over “[t]he Java virtual machine is an interpreter that decodes and executes the Bytecodes in the Java class file”}*.

The Java virtual machine is commonly implemented in software by means of an interpreter for the Java methods. As disclosed in the specification, the UDTs and UDMs are written in Java code, specifically Bytecode to be executed by the JAVA virtual machine.



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SOKOLOV discloses an invention which applies a Java virtual machine in decoding and executing Bytecodes in a Java class file. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by PEDERSON by combining it with the invention disclosed by SOKOLOV.

One of ordinary skill in the art would have been motivated to do this modification so that UDTs and UDMs may be properly executed.

24. Regarding **dependent claim 22**, PEDERSON, in combination with SOKOLOV, discloses a database system wherein the code comprises JAVA bytecode *{See SOKOLOV, col. 2, lines 8-10, wherein this reads over “[t]he Java virtual machine is an interpreter that decodes and executes the Bytecodes in the Java class file”}*.

As disclosed in the specification, the UDTs and UDMs are written in Java code, specifically Bytecode to be executed by a JAVA virtual machine. SOKOLOV discloses an invention which applies a Java virtual machine in decoding and executing Bytecodes in a Java class file. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by PEDERSON by combining it with the invention disclosed by SOKOLOV.

One of ordinary skill in the art would have been motivated to do this modification so that the database system may process database queries used to create a user-defined data type in JAVA.

25. Regarding **dependent claim 27**, PEDERSON, in combination with SOKOLOV, discloses a database system wherein the interpreter comprises a virtual machine *{See SOKOLOV,*

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*col. 2, lines 8-10, wherein this reads over “[t]he Java virtual machine is an interpreter that decodes and executes the Bytecodes in the Java class file”}.*

The Java virtual machine is commonly implemented in software by means of an interpreter for the Java methods. As disclosed in the specification, the UDTs and UDMs are written in Java code, specifically Bytecode to be executed by the JAVA virtual machine. SOKOLOV discloses an invention which applies a Java virtual machine in decoding and executing Bytecodes in a Java class file. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by PEDERSON by combining it with the invention disclosed by SOKOLOV.

One of ordinary skill in the art would have been motivated to do this modification so that UDMs may be properly executed in the database system.

26. **Claim 12** is rejected under 35 U.S.C. 103(a) as being unpatentable over PEDERSON, in view of Slesinsky (USPGPUB No. 2002/0059280, hereinafter referred to as SLESINSKY), filed on September 25, 2001, and issued on May 16, 2002.

PEDERSON teaches the limitations of claims 1-3, 6-11, and 13-15, 17-22, 24-26, and 28 above.

PEDERSON differs from the claimed invention in that PEDERSON fails to disclose a method wherein the interface comprises of providing a JAVA native interface (claim 12).

27. Regarding **dependent claim 12**, PEDERSON, in combination with SLESINSKY, discloses a method wherein the interface comprises of providing a JAVA native interface {*See SLESINSKY, Para. 0023, wherein this reads over “database may connect to system 106 via a suitable interface, such as a Java Database Connectivity Standard (‘JDBC’)”}.*

In order to provide communication between the modules of the database and virtual machine code, an interface is necessary to the invention. SLESINKSY discloses a JDBC, a Java interface used to provide communication between the native database and the virtual machine. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the above invention suggested by PEDERSON by combining it with the invention disclosed by SLESINSKY.

One of ordinary skill in the art would have been motivated to do this modification so that the interface could act as a conduit for the exchanges of data, common in UDT and UDM operations, between the database and the virtual machine.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is (571) 272 2737. The examiner can normally be reached on M-F, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on (571)272-4023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

  
**SAM RIMELL**  
PRIMARY EXAMINER

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paul Kim  
Examiner  
Art Unit 2161

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